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Patent
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Attorney's Docket No. 018775-718

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of)

Kenji ISHIBASHI et al.)

Application No.: 08/988,537)

Filed: December 10, 1997)

For: IMAGE OBSERVATION
APPARATUS)

Group Art Unit: 2775 2675

Examiner: A. Awad

Appeal No.

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BRIEF FOR APPELLANT

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

This appeal is from the decision of the Primary Examiner dated June 29, 2001 (Paper No. 24), finally rejecting claims 1-4 and 23-26, which are reproduced as an Appendix to this brief.

A check covering the [] \$160.00 (220) [X] \$320.00 (120) Government fee and two extra copies of this brief are being filed herewith.

The Commissioner is hereby authorized to charge any appropriate fees under 37 C.F.R. §§1.16, 1.17, and 1.21 that may be required by this paper, and to credit any overpayment, to Deposit Account No. 02-4800. This paper is submitted in triplicate.

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I. Real Party in Interest

The present application is assigned to Minolta Co., Ltd., as recorded at Reel/Frame: 9087/0822.

II. Related Appeals and Interferences

The Appellants' legal representative, assignee do not know of any other appeal or interferences which will affect or be directly affected by or have bearing on the Board's decision in the pending appeal.

III. Status of Claims

Claims 1-26 are currently pending. Claims 1-4 and 23-26 stand rejected and claims 5-22 have been allowed.

IV. Status of Amendments

No amendments have been filed subsequent to the final rejection.

V. Summary of the Invention

The present invention relates to an image observation apparatus (1) for observing an image which a user observes by looking through an ocular window or eyepiece window (11). The apparatus is held by the hand of the user or can be fitted to the head of the user. Conventionally, the purpose of such an image observation apparatus (1) is to view computer graphics operated by a computer (2a in Figure 4) or connected to a camera used in image formation and mounted at a remote location to be controlled by the user, (2 in Figure 3). The image forming apparatus is responsive to the posture (e.g., direction and position) of the image observation apparatus body. Stated differently, the observed image changes with the orientation of the user, whether the image is graphics generated by a computer or a remotely located camera.

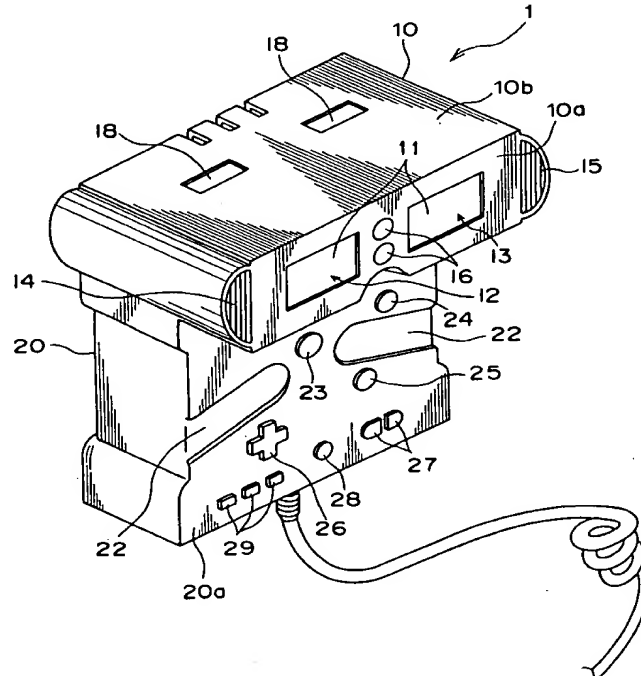
The present Appellants have discovered that the image observation apparatus body of the conventional technologies continues to produce images even when the user take the

image observation apparatus body away from his or her eyes. (Specification, page 2, lines 16 et seq.) Under these situations, the image is unnecessarily changed in response to the movement of the image observation apparatus. This change, if rapid enough, raises the possibility that the durability of the image taking direction control may be impaired or that errors may accumulate in the operating process of a computer generating graphics. (Specification, page 3, lines 3 et seq.) In either instance, these possibilities raise the likelihood of malfunction.

Additionally, when the user resumes use of the image observation apparatus, he may not always recognize the position and direction of the image if the image taking direction of the camera is not kept constant or stationary during the time of resumption of observation and it can be difficult for the observer to reorient himself. The user, in short, can be rapidly disoriented. (Specification, page 4, lines 7 et seq.)

Upon the present inventors uncovering these effects, the inventors have developed an image observation apparatus which includes a main body 1 which has an image display device 11. An operation member 23 is provided on the main body 1 which is operated manually in order to give an instruction to the image observation apparatus. A detector 105 detects the posture of the main body (Figures 3 and 4). A controller (operation unit 103) controls an image which is displayed on the image display device in response to a signal which is output from the detector 105. The controller as recited in claim 1 does not allow a changing in the image which is displayed on the image display device in response to the signal which is output from the

Fig. 1



detector when the operation member is operated. Stated succinctly, the image is not changed; hence, it is instead frozen in response to the manual operation of the operation member 23 on the image display device.

Claim 2 recites that the image observation apparatus further includes a camera for forming an image which is displayed on the image display device wherein the controller controls the image which is displayed thereon by controlling the posture of the camera.

Claim 3 recites that the operation member for adjusting at least one of the posture, focal length and focus of the camera, i.e., has more than one function.

Claim 4 is similar to claim 2 but recites the broader term "image forming device" rather than camera.

Claim 23 differs from claim 1 in that it specifically recites that the main body is configured to be held in the user's hands when the user observes the image being displayed on the image display device.

Claim 24 is similar to claim 4 but recites that the controller controls the posture of the camera and additionally shares the distinctions of claim 23 upon which it is dependent.

Independent claim 25 is similar to claim 1 but instead recites that the operation member is operated manually in order to give an instruction to the image observation apparatus to prevent circuitry which provides the image display device with context from changing the displayed image.

Claim 26 is similar to claim 4 but recites that the controller controls the posture of the camera and additionally shares the distinctions of claim 25 upon which it is dependent.

VI. The Issues

1) Whether the rejection of independent claims 1, 23 and 25 under 35 U.S.C. § 103 as allegedly being obvious over the *Tabata* patent (U.S. Patent No. 5,579,026) in view of the *Tosaki* patent (U.S. Patent No. 5,844,530) is proper.

2) Whether the rejection of claims 2-4 under 35 U.S.C. § 103 as allegedly being obvious over the *Tabata* and *Tosaki* patents as applied to claim 1, and in further view of the

Takasu Tomoji patent publication (Japanese Patent Publication No. 03056923 A, referred to as the *Takasu* patent publication in the Office Action) is proper.

3) Whether the rejection of claims 23 and 26 under 35 U.S.C. § 103 as allegedly being obvious over the *Tosaki* and *Tabata* patent publications as applied to claims 23 and 25, and in further view of the newly cited *Kodama* patent (U.S. Patent No. 6,124,843). These rejections are respectfully traversed.

VII. Grouping of Claims

Claims 1-4, 23 and 25 stand or fall together for purposes of this appeal only and claims 24 and 26 stand or fall together for purposes of this appeal only, but claims 24 and 26 do not stand or fall with claims 1-4, 23 and 25, for the reasons stated below.

VIII. Argument

- 1) The Applied Art, Even In Combination, Does Not Disclose the "Controller" as Recited *Inter Alia* in the Independent Claims

As stated above, the invention as claimed in claim 1 includes among other things an operation member provided on the main body which is operated manually such that the controller stops blinking the image to the signal from the posture detector when the operation member is operated. By manually operating the operation member (for example, by turning a linking switch to an off position), the user prevents the image from being changed or moved when the observer is not observing the image. See specification, page 7, lines 3-13; page 24, lines 10-24. As a result, when the observation is resumed, the image provided is recognizable and consistent with the prior image, regardless of any unintentional movement or rough handling of the main body. Without this feature of suspending the linking, the image displayed when resuming observation would appear little resemblance to the image previously displayed. Also, there would be wear and tear on the actual device in making these rapid, and unnecessary image adjustments.

In contrast, the *Tabata* patent (Figures 1 and 2) does not disclose such an operation member on the main body (1). Further, the *Tabata* patent does not disclose that the controller (11) suspends the linking of an image when the operation member is operated as acknowledged by the Examiner.

The Office asserts that the *Tosaki* patent teaches a pause switch on a central pad "to temporarily stop the game." Specifically, the section relied upon by the Examiner, column 16, lines 22-39, states:

If a better perception of the external environment is to be achieved in the *course of a game*, the visor 80 is opened by being turned upward about the fulcrums 80L and 80R. This increases the quantity of outside light that enters the display device 2 from the outside, opens the switch 92 of the fluorescent tube 71, and *stops the images from being projected on the display device 2*. The external environment can therefore be clearly perceived even when the HMD 1 is still worn. *It is also possible at this time to depress the pause switch on the control pad 201 and to temporarily stop the game.*

To *resume the game*, the visor 80 should be turned downward about the fulcrums 80L and 80R, the switch 92 of the fluorescent tube 71 closed, and the fluorescent tube 71 lighted. *If the game is temporarily stopped, the pause button on the control pad 201 should be depressed again to cancel the pause mode.* (Emphasis added.)

Applicants respectfully disagree with the Examiner's assessment of what this language means. The Office suggests that the visor switch 92 and the pause switch of the control pad 201 is analogous to the stop button and the pause button of a VCR. Appellants respectfully point out that the *Tosaki* patent first activates the visor switch 92 and then the pause switch of the control pad 201. The analogy to a stop button and a pause button on a VCR is not supportable if no other reason than it would make no sense to "pause" an already stopped VCR tape. The Office Action also states "that the images and the game are

same thing." Applicants respectfully submit that neither of these statements are supported by the actual text of the *Tosaki* patent.

The *Tosaki* patent states unambiguously that the movement of the visor "opens the switch 92 of the fluorescent tube 71." This means that the images are simply no longer projected because they are no longer lit. The images are actually still being generated, they are just not viewable by the user. No other interpretation of this passage is possible because of the later mention of the pause switch.

The pause switch is necessary because the game would continue without the user's observation if the game were not paused. It does not "pause" the image display since the image display has already been stopped. The passage in the *Tosaki* patent is unambiguous in this regard and the Applicants strenuously submit that the Office has misinterpreted the text thereof.

In any event, the Tosaki patent cannot meet the recitation of claim 1 of the controller not allowing the changing of an image which is displayed on the image display device since no image is displayed once the visor is moved in an up position.

Further, it would not be obvious for the pause switch to be operable at a time other than when the visor has caused the fluorescent tube switch 92 to turn off the fluorescent tube by the movement of the visor to actually cause the images to pause, rather than the game as the *Tosaki* patent states. With respect to the Office's suggestion that the game pause switch of the *Tosaki* patent is like a video pause switch on a VCR, it is noted that a VCR displays a non-interactive movie on a display screen, and is not a heads-up display. There is no disorientation on the viewer's part simply by pausing the video on a VCR. In striking contrast, if one simply froze the image on a heads-up display, the image of which is controlled by the orientation of the heads-up display, the subject would be disoriented. This would be because upon application of the pause switch the imaged world would "freeze" even though user's head was moving. As stated before, the "cockpit" of the game being displayed would freeze, causing the cockpit to appear to spin when the user moved his head. Instead, Applicants interpret this passage of the *Tosaki* patent as it is written. The passage states that the pause switch is used "to temporary stop the game." The game is

an interactive process. There is no reason to think that stopping the interactive process would freeze the image being displayed, particularly since the image is not, in fact, being displayed. Every indication freezing an image would be inappropriate particularly for a head mounted display since freezing the image would have a disorienting effect on the user.

It should not be forgotten that the present invention finds its origin a problem of display devices wherein when a user sets the display device down, he expects it to be oriented at the same location when it is picked back up.¹ Otherwise he would be disoriented as to what he is currently looking at since if the image is allowed to change as it is set down, when picked back up the scene might be completely different than expected. Also, a hand-held display can be dropped or set down rapidly, and if the image display was allowed to change, there could be damage due to the rapidly changing image. Since these problems do not occur in head mounted displays for interactive games, no obvious motivation exist for modification to the *Tosaki* patent which would result in the invention recited in the present claims.

- 2) The *Takasu* patent publication does not cure the deficiencies of the rejection of the independent claims.

The *Takasu* patent was cited for teaching a camera which forms an image that is displayed on the image display device. First, it is noted that the Office does not suggest that the *Takasu* patent teaches the missing recitations of the independent claims, identified above.

- 3) The *Kodama* patent does not supply the missing teachings of the independent claims nor is it asserted to by the Examiner.

Further, the *Kodama* patent shows an embodiment where a supervisor can supervise and correct the operations of an operator via a camera 32 mounted on a visor 29 of the

¹ The origin of the invention is in hand-held displays, and then extended to head mounted displays.

operator. As such, it does not disclose anything analogous to a controller which controls the image which is displayed [or the image display] by controlling the posture of the camera as recited in claim 24, or by operating the image data which are output from the image forming devices, as recited in claim 26. Hence, even in combination, one assumes some logical combination of the references, the result would not be the present invention for these and the reasons mentioned above with respect to the independent claims.

The invention recited in claims 24 and 26 means that the image on the image display is not merely paused, but that the circuitry (e.g., camera and gimbal movement circuit) is prevented from changing the image. this not only reduces wear on the image display circuitry, it also prevents image degradation.

IX. Conclusion

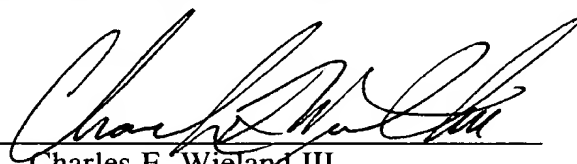
Appellants have specified errors in the Examiner's final rejection and specified how recitations of the claims not found in the applied art render the present invention unobvious.

In light of the foregoing, Applicants respectfully request that the Examiner's final rejection of claims 1-4 and 23-26 be overruled and remanded and the application remanded to the Examiner for full prompt allowance.

Respectfully submitted,

BURNS, DOANE, SWECKER & MATHIS, L.L.P.

By:


Charles F. Wieland III
Registration No. 33,096

P.O. Box 1404
Alexandria, Virginia 22313-1404
(703) 836-6620

Date: November 13, 2001

APPENDIX

The Appealed Claims

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1. An image observation apparatus comprising:
a main body which has an image display device;
an operational member which is provided on the main body and which is operated manually in order to give an instruction to the image observation apparatus;
a detector for detecting a posture of the main body; and
a controller for controlling an image which is displayed on the image display device in response to a signal which is output from the detector,
wherein the controller does not allow changing the image which is displayed on the image display device in response to the signal which is output from the detector when the operational member is operated.

2. The image observation apparatus as claimed in claim 1, further comprising a camera which forms the image which is displayed on the image display device,
wherein the controller controls the image which is displayed thereon by controlling a posture of the camera.

3. The image observation apparatus as claimed in claim 2, wherein the operational member is a member for adjusting at least one of the posture, a focal length and a focus of the camera.

4. The image observation apparatus as claimed in claim 1, further comprising an image forming device which forms the image which is displayed on the image display

device,

wherein the controller controls the image which is displayed on the image display device by operating image data which are output from the image forming device.

23. An image observation apparatus comprising:

a main body which has an image display device, the main body being configured to be held in a user's hands when the user observes an image being displayed on the image display device;

an operational member which is provided on the main body and which is operated manually in order to give an instruction to the image observation apparatus;

a detector for detecting a posture of the main body; and

a controller for controlling the image which is displayed on the image display device in response to a signal which is output from the detector,

wherein the controller does not allow changing the image which is displayed on the image display device in response to the signal which is output from the detector when the operational member is operated.

24. The image observation apparatus as claimed in claim 23, further comprising a camera which forms the image which is displayed on the image display device,

wherein the controller controls the image which is displayed thereon by controlling a posture of the camera.

25. An image observation apparatus comprising:

a main body which has an image display device;

an operational member which is provided on the main body and which is operated manually in order to give an instruction to the image observation apparatus to prevent circuitry which provides the image display device with context from changing the displayed image;

a detector for detecting a posture of the main body; and

a controller for controlling the image which is displayed on the image display device in response to a signal which is output from the detector,

wherein the controller does not allow changing the image which is displayed on the image display device in response to the signal which is output from the detector when the operational member is operated.

26. The image observation apparatus as claimed in claim 25, further comprising an image forming device which forms the image which is displayed on the image display device,

wherein the controller controls the image which is displayed on the image display device by operating image data which are output from the image forming device.

TABLE OF CONTENTS

PAGE

I.	<u>Real Party in Interest</u>	2
	<u>Related Appeals and Interferences</u>	2
	<u>Status of Claims</u>	2
IV.	<u>Status of Amendments</u>	2
V.	<u>Summary of the Invention</u>	2
VI.	<u>The Issues</u>	5
VII.	<u>Grouping of Claims</u>	5
VIII.	<u>Argument</u>	5
IX.	<u>Conclusion</u>	9



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